Application No.: 10/531,151   2   Docket No.: 562492004100

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Claim 1 (cancelled):

Claim 2 (currently amended): The receiver~~arrangement~~ of claim 23[[1]] wherein the correlation peak ~~identification means~~identifier comprises cross-correlation peak identification means for identifying a cross-correlation peak as having a smaller magnitude than a correlation peak.

Claim 3-4 (Cancelled)

Claim 5 (currently amended): The receiver~~arrangement~~ of claim 2 ~~any preceding claim~~ wherein the wireless communication system is a UMTS system.

Claim 6 (currently amended): The receiver~~arrangement~~ of claim 5 wherein the UMTS system is a UTRA TDD system.

Claim 7 (currently amended): The receiver~~arrangement~~ of claim 6 wherein the input signals comprise random access PRACH bursts.

Claim 8 (currently amended): A method for channel estimation in a receiver for receiving transmissions comprising channel information, the transmissions from~~wireless communication system~~ a plurality of wireless units, the method comprising:
    estimating correlations between received channel information and a plurality of midamble sequences, each midamble sequence derived from a single periodic base code;
    producing estimate signals for the correlations~~providing correlation channel estimation means receiving input signals representative of channel information and producing therefrom correlation channel estimate signals~~;
    identifying peaks in the correlation estimate signals~~providing correlation peak identification means coupled to the correlation channel estimation means, the correlation peak identification~~

sf-2258884

Application No.: 10/531,151   3   Docket No.: 562492004100

~~means deriving from the correlation channel estimate signals representative of correlation peaks~~; and

<u>removing identified peaks in the correlation estimate signals that correspond to cross-correlations for transmissions from wireless units other than a selected wireless unit</u>~~providing cross-correlation-peak-removal means coupled to the correlation channel estimation means and to the correlation-peak-identification means, the cross-correlation peak-removal means removing cross-correlation peaks from the correlation channel estimate signals to produce improved channel estimate signals~~.

Claim 9 (currently amended): The method of claim 8 wherein <u>identifying includes identifying a cross-correlation peak by identifying a correlation peak with a smaller magnitude than another identified correlation peak</u>~~correlation peak identification means comprises cross-correlation peak identification means identifying a cross-correlation peak as having a smaller magnitude than a correlation peak~~.

Claim 10-11 (Cancelled)

Claim 12 (currently amended): The method of <u>either claim 8 or claim 9,</u> ~~any one of claims 8-11~~ wherein the wireless communication system is a UMTS system.

Claim 13 (original): The method of claim 12 wherein the UMTS system is a UTRA TDD system.

Claim 14 (currently amended): The method of claim 13 wherein the <u>transmissions</u> ~~input signals~~ comprise random access PRACH bursts.

Claim 15 (currently amended): The method of any one of claims <u>8 or 9</u> ~~8-14~~ wherein the step of <u>removing cross-correlation peaks</u>~~providing cross-correlation peak removal means~~ comprises repeatedly <u>removing</u>~~cancelling~~ cross-correlation peaks <u>by identifying a next largest correlation peak remaining after removal of a previously identified correlation peak determined to be smaller than an another identified correlation peak</u>~~at locations other than that of an identified peak and identifying the next largest magnitude remaining peak~~.

sf-2258884

Claim 16 (currently amended): The method of claim 15 wherein repeatedly ~~cancelling~~removing ~~and identifying~~ is performed a predetermined number of times.

Claim 17 (currently amended): The method of claim 15 wherein repeatedly ~~cancelling~~removing ~~and identifying~~ is performed until an identified next largest peak has a magnitude less than a predetermined value.

Claim 18 (currently amended): The method of any one of claims 8-9 ~~8-17~~ further comprising ensuring that no transmission occurs in a timeslot immediately following a timeslot~~that~~for which the correlation estimates were obtained~~in which channel estimation is performed~~.

Claim 19-20 (cancelled)

Claim 21 (currently amended): An integrated circuit comprising the receiver of claim 23 ~~arrangement of any one of claims 1-7~~.

Claim 22 (currently amended): A computer readable medium comprising instructions for implementing a method in a receiver, the receiver for receiving, from a plurality of wireless units, transmissions comprising channel information, the method comprising:

estimating correlations between received channel information and each of a plurality of midamble sequences, each midamble sequence derived from a single periodic base code;
identifying peaks in the correlations;
identifying one of the peaks as corresponding to a transmission from a selected wireless unit; and

removing an identified peak in the correlations that corresponds to a correlation of the received channel information and a midamble sequence associated with another of the plurality of wireless units.

~~program element comprising computer program means for performing the method of any one of claims 8-19~~.

sf-2258884

Application No.: 10/531,151   5   Docket No.: 562492004100

Claim 23 (new) A receiver for receiving from a plurality of wireless communication units signals representative of channel information, the channel information comprising midamble sequences constructed from a single periodic base code, the receiver comprising:

a channel correlation estimator operable to receive the channel information and produce therefrom correlation channel estimate signals by correlating the channel information with midamble sequences constructed from a single periodic base code, each midamble sequence associated with a different one of the plurality of wireless communication units;

a correlation peak identifier coupled to the correlation channel estimator, and operable to identify correlation peaks from the correlation channel estimate signals; and

a cross-correlation peak remover coupled to the correlation channel estimator and the correlation peak identifier, and operable to remove from the correlation channel estimate signals identified cross-correlation peaks corresponding to midamble sequences of wireless communication units other than a desired wireless unit.

Claim 24 (new) A receiver according to claim 23, wherein the receiver is provided in a base station of a wireless communication system.

sf-2258884